

CLAIMS

1. A parallel and pipelined image processing system for providing optimal correspondence information
5 between a first data set of image data and a second data set of image data of a scene, comprising:

a vector generator for generating, for each selected image data in the first data set and second data set, a
plurality of first vectors and a plurality of second vectors, each first vector and second vector representing the
ordered relative values between said selected image data and a plurality of selected image data surrounding said
selected image data; and

10 a correlation unit, coupled to the vector generator and receiving the plurality of first vectors and the
plurality of second vectors, for generating a first correspondence information between a selected first vector and a
second vector offset from each other by a first offset while said correlation unit generates a second
correspondence information between another selected first vector and another second vector offset from each
other by a second offset, the optimal correspondence information determined by selecting either the first
15 correspondence information or the second correspondence information in accordance with optimization criteria.

2. A method of generating disparity results with low latency in a data processing system that processes
elements of a first data set and a second data set, each having a plurality of elements, comprising:

receiving elements of the first and second data sets, including a first element of the first data set; and
20 generating a disparity result for the first element before substantially all elements of the first and second
data sets have been received.